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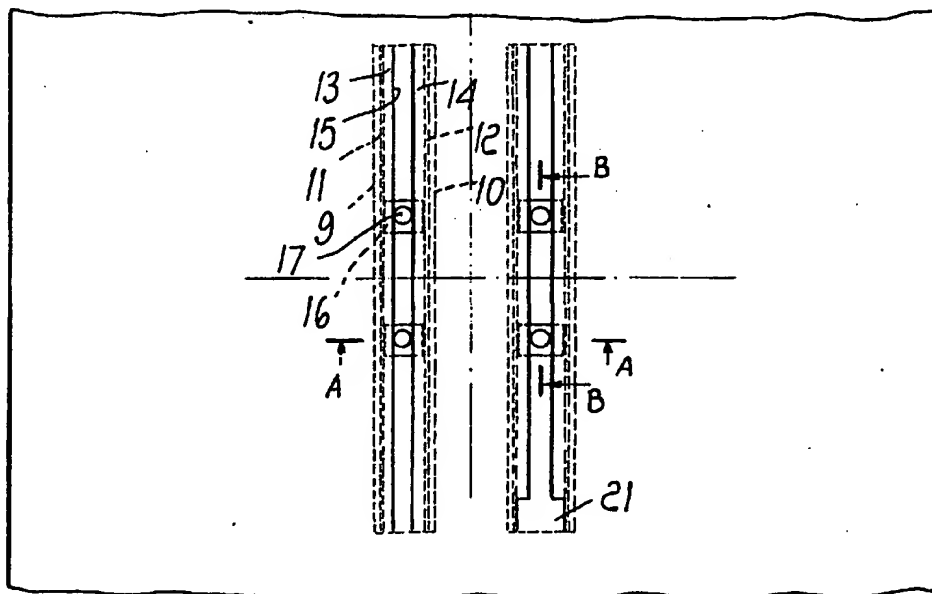


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(54) Title: SNOWBOARD



(57) Abstract

The snowboard provides parallel profiled bars (2, 3; 4, 5) extending in the longitudinal direction (6) of the snowboard for mounting bindings, wherein nuts (16) provided with a thread (17) are secured to the profiled bars against falling out and are non-rotatable, but slideable in the longitudinal direction.

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SNOWBOARD

Technical field

The invention relates to a snowboard having a mounting device integrated therein for mounting a binding according to the preamble of claim 1. In these known snowboards which have been commercially available approximately since the fall of 1993 inserts are integrated in the body of the snowboard, whereto the binding holding the shoe can be screwed. For adjusting different binding positions and particularly the step length, i.e. the spacing between the centers of the two bindings in the longitudinal direction of the snowboard, some manufacturers, such as Burton, have provided a plurality of inserts by means of which various preset binding positions can be taken.

Other manufacturers provide only four inserts per binding, arranged in a square of 4 cm by 4 cm, and have provided elongated holes of approximately 4 cm in length on the main body of the binding, so that the step length can be adjusted up to 8 cm.

In so-called freestyle boards, however, the users wish to adjust the step length to a larger extent, for which reason some manufacturers provide six inserts per binding, of which, however, only four are needed, respectively, so that by adjusting the binding a greater number of variations is possible.

Even this, however, is not sufficient in all cases, since in the above-described snowboards an adjustment of the step length (mutual spacing between the two bindings) and an adjustment of the center of gravity of the user's body relative to the longitudinal axis of the snowboard

(center of the connecting line of the two bindings) influence and thus limit each other.

Although the inserts provide a considerably improved anchorage to the snowboard compared to the previously used
5 wooden screws which were screwed directly into the snowboard, the inserts may still be "torn out" upon being subjected to high loads.

Disclosure of the Invention

The principal aim of the present invention is to provide a snowboard having a mounting device integrated
10 therein for mounting a binding, said snowboard offering an extended continuous adjustment range of the step length of the bindings and of the adjustment of the center of gravity of the user's body relative to the longitudinal axis of the snowboard, and additionally providing a very high strength.

15 This problem is solved by the features stated in the characterizing part of claim 1. Advantageous embodiments and improvements of the invention can be taken from the subclaims.

In summary, profiled bars are embedded in the body of
20 the snowboard as a mounting device for mounting the binding, preferably two parallel profiled bars per binding, each of which preferably runs in parallel to the longitudinal axis of the snowboard, wherein a nut is arranged in said profiled bars in such a way that it is
25 secured against rotation and against falling out, but is adjustable in the longitudinal direction of the profiled bar, and into which nut a mounting screw can be screwed for mounting the binding.

The length of the profiled bars can be freely selected

so that the step length can be adjusted to the corresponding extent. Furthermore, both bindings can be moved in parallel relative to each other to a rather large extent, i.e. over the total length of the bars, whereby the user's center of weight can be adjusted relative to the longitudinal axis of the snowboard. Since the profiled bars extend over a considerable length compared to inserts, an improved distribution of forces in the body of the snowboard is also obtained, so that the profiled bars can be exposed to higher loads, thereby reducing the risk of the binding being torn out. In addition, the profiled bars may contribute, to a certain extent, to increase the flexional strength of the snowboard.

The profiled bars have an essentially box-shaped, rectangular cross section with a gap towards the binding side of the snowboard. The opening width of the gap is smaller than the diameter of the nut, thus securing said nut against falling out. The opening width is adapted to the diameter of the mounting screw and thus to the diameter of the thread of the nut, and is only slightly larger than the latter one. The width of the inside of this box-shaped profile is only slightly larger than the spacing of two parallel outer surfaces of the nut so that the nut is fixed against rotation.

According to a different embodiment of the invention, the gap which is open to the binding side of the snowboard has an enlargement at one position which corresponds approximately to the diameter of the nut such that nuts can be respectively inserted at, or removed from, this position. According to another embodiment of the invention,

said gap is constant over the entire length of the profiled bar so that nuts can no longer be removed after the profiled bars have been integrated into the snowboard.

According to a further development of the invention,
5 the profiled bars provide anchoring projections which laterally project beyond the box profile for an improved anchoring of the profiled bar in the body of the snowboard.

A further development of the invention provides that the sides of the profile of the profiled bars adjacent to
10 the open gap and facing the binding side of the snowboard are covered by the coating of the snowboard. This not only improves the appearance, but also prevents the penetration of water into the anchoring region between the snowboard and the profiled bar, and also slightly increases the
15 stability of the anchorage.

Brief description of the drawings

Hereinafter, an embodiment of the invention shown in the accompanying drawings is described in more detail:

figure 1 shows a general plan view of a snowboard with two pairs of profiled bars;

20 figure 2 is a detailed plan view of the snowboard in the area of a pair of profiled bars;

figure 3 is a cross-section taken along the line A-A of figure 2, and

figure 4 is a longitudinal section taken along the
25 line B-B of figure 2.

Ways of carrying out the Invention

The same reference numbers refer in the figures to the same or corresponding parts.

Figure 1 shows the plan view of a snowboard 1 with a

total of four profiled bars 2, 3, 4, 5 which are arranged in respective pairs (profiled bars 2 and 3 and profiled bars 4 and 5), and have a longitudinal extension extending symmetrically with respect to the longitudinal axis 6 of the snowboard, and parallel to this axis 6. Respectively one associated pair of profiled bars serves for the mounting of a binding. Further, the pairs of profiled bars are positioned symmetrically to a central transverse axis 7 of the snowboard so that in a standard assembly of the binding the center of gravity of the user's body lies above the section of the axes 6 and 7. Each binding can be shifted to the extent of the length of the associated profiled bars so that by an opposite adjustment of the two bindings the step length can be changed, and by an adjustment of the two bindings in the same direction the position of the center of gravity of the body relative to the longitudinal axis 6 of the snowboard can be changed. For this purpose only the mounting screws (not shown) of the snowboard bindings have to be released, the bindings have to be adjusted and then the mounting screws fixed again.

Figures 2 to 4 show an enlarged plan view of the section of the snowboard supporting a pair of profiled bars as well as a cross-section along line A-A and a longitudinal section along line B-B. The profiled bars 2, 3 and 4, 5 are embedded in parallel to each other into the body of the snowboard and anchored thereat. Each profiled bar consists of a box-shaped rectangular profile (figure 3) with a bottom 8, two lateral walls 11 and 12 which are parallel to each other and perpendicular to the bottom 8,

and two edge-shaped sides 13 and 14 which inwardly oppose each other, run in parallel to the bottom 8 and define a gap 15 between each other. Two anchoring projections 9 and 10 extend laterally from the bottom 8 and serve for an improved anchoring of the profiled bar in the body of the snowboard 1.

In the illustrated embodiment, two nuts 16 are arranged in each profiled bar 2-5, each having a threaded hole 17. In the plan view, the nuts are preferably devised as square nuts such that two of their lateral surfaces are guided inside the profiled bar at its lateral walls 11 and 12 and secured against rotation. However, the nuts can be moved without any problem in the longitudinal direction of the bar and are secured against falling out by the edge-shaped sides 13 and 14. The opening width of the gap 15 is slightly larger than the diameter of the threaded hole 17 so that a threaded screw can be inserted from the top of the snowboard through the gap and can be screwed into the thread of the nut. Upon fastening the screw, the nut 16 is pressed against the edge-shaped sides 13 and 14, thus, on the one hand, fixing the binding to the snowboard and preventing a further adjustment of the nuts, and thus of the binding in the longitudinal direction of the bar due to the friction between the screw and the sides 13 and 14.

As can be seen in particular in the sectional views of figures 3 and 4, the profiled bars 2-5 are integrated into the body 18 of the snowboard 1 and anchored by the anchoring projections 9 and 10. The edge-shaped sides 13 and 14 are located beneath the surface 19 and are covered by the coating 20.

In the illustrated embodiment, the nuts 16 have to be inserted from the front end of the profiled bars prior to the insertion of the profiled bars into the snowboard. Thus, they cannot fall out of the finished snowboard, nor
5 be exchanged, if for instance a thread is damaged.

According to a different embodiment of the invention as shown in the example of the profiled bar being positioned at the right side of figure 2, each profiled bar preferably provides at one of its ends a broader opening 21
10 which can be accessed from the binding side of the snowboard, which opening is adapted to the width of the nut 16 and allows the insertion or removal of a nut. After this insertion, the nut is shifted at least by the amount of its longitudinal extension and is then secured. When the
15 binding is not yet mounted, this opening 21 can be closed for the transport with a plug or an adhesive tape.

Basically the length of the profiled bars can be freely selected. It is also, at least theoretically, possible to use only two continuous profiled bars instead
20 of four. However, this would be disadvantageous, since it would hinder a free-flex, i.e. free flexing of the snowboard, in the area between the bindings. With regard to the major part of snowboard bindings currently commercially available, the center spacing of the profiled bars of a
25 pair will be fixed to a value of 4 cm such that the hole spacings there provided are compatible with the bar spacings. Then the major part of common snowboard bindings, and this refers both to plate and shell-type bindings, can be easily mounted on the snowboard with the advantage of
30 the invention that the position of the individual binding

can be varied to a relatively large extent.

All of the technical details described in the specification, in the claims and in the figures can, either alone or in any desired combination, be essential for the
5 invention.

CLAIMS

1 1. Snowboard with a mounting device integrated therein
2 for mounting a binding, characterized in that said mounting
3 device comprises at least two profiled bars (2,3;4,5) to
4 which nuts (16) are secured against falling out and are
5 non-rotatable, but slideable in the longitudinal direction.

1 2. Snowboard according to claim 1, characterized in
2 that said profiled bars (2-5) have a generally box-shaped
3 profile with a gap (15) open to the binding side of the
4 snowboard (1), the opening width of said gap being smaller
5 than the width of the nut in plan view.

1 3. Snowboard according to claim 2, characterized in
2 that the opening width of the gap is slightly larger than
3 the diameter of the thread (17) of the nut (16).

1 4. Snowboard according to claim 2 or 3, characterized
2 in that said profiled bars (2-5) have laterally protruding
3 anchoring projections (9,10).

1 5. Snowboard according to any one of claims 2 to 4,
2 characterized in that the gap (15) which is open to the
3 binding side of the snowboard has an enlarged opening (21)
4 in the end region of the profiled bar (2-5), the opening
5 width whereof corresponds to the width of the nuts (16).

1 6. Snowboard according to any one of claims 1 to 4,
2 characterized in that said profiled bars (2-5) extend in
3 parallel to the longitudinal direction of the snowboard.

1 7. Snowboard according to any one of claims 1 to 6,
2 characterized in that two parallel bars (2,3;4,5) are
3 provided per binding, the centers of which preferably have
4 a spacing of 4 cm to each other.

1 8. Snowboard according to any one of claims 1 to 7,
2 characterized in that the edge-shaped sides (13,14) of the
3 box-shaped profile of the profiled bars (2-5), which face
4 the binding side, are covered by a coating (20).

1 / 2

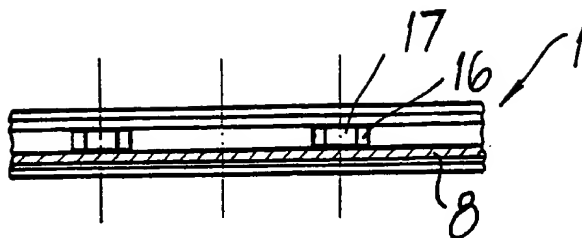


Fig. 4

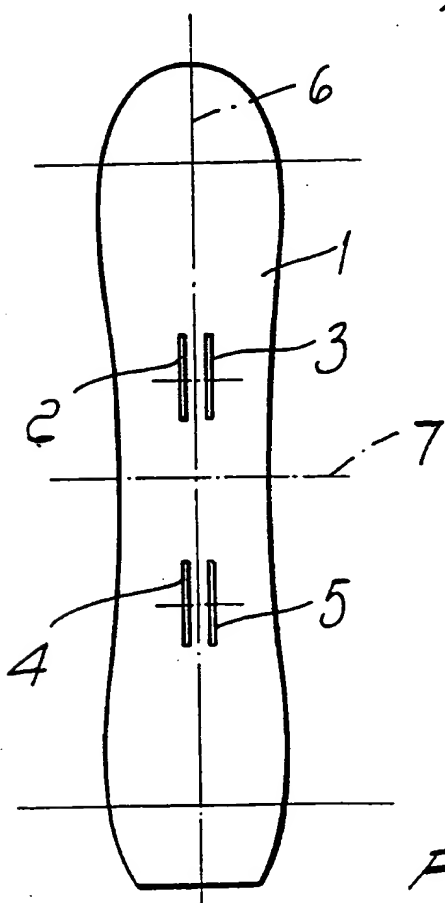
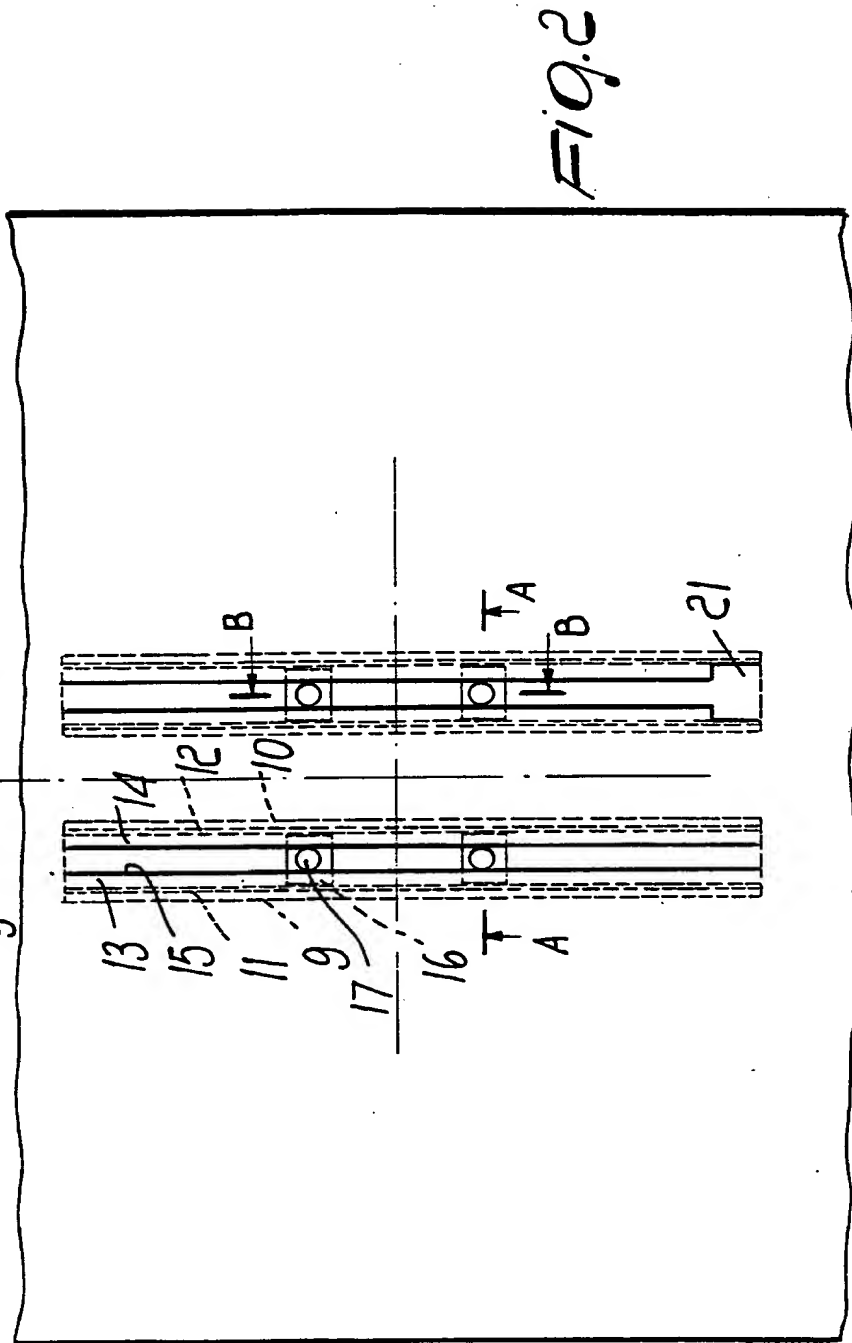
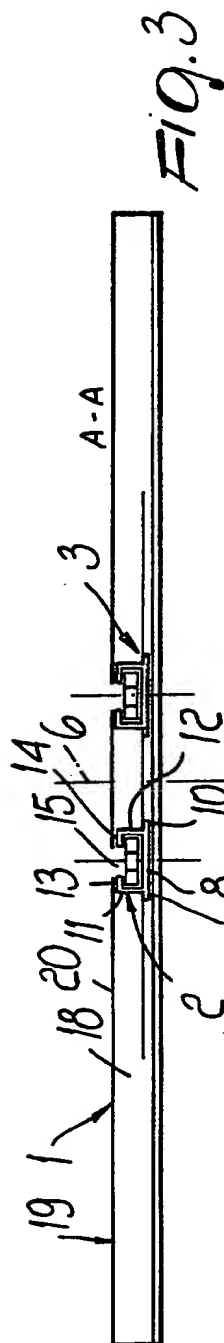


Fig. 1



INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 94/02588

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A63C9/08 A63C5/03

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A63C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US,A,4 871 337 (HARRIS) 3 October 1989 see abstract; figures 1,3,5 see column 2, line 29 - line 39 ---	1-4,6
Y	US,A,4 022 491 (POWELL) 10 May 1977 see figures 1,2 ---	1-4,6
A	FR,A,2 575 660 (DUNAND) 11 July 1986 see page 3, line 13 - line 27; figures ---	1
A	CH,A,676 327 (VIT-SPORT AG.) 15 January 1991 see column 6, line 23 - line 33; figure 4 -----	4

☐ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

information on patent family members

Int. .onal Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4871337	03-10-89	NONE	
US-A-4022491	10-05-77	NONE	
FR-A-2575660	11-07-86	NONE	
CH-A-676327	15-01-91	NONE	